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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/773,361	01/31/2001	Jan Nieman	ACH2650P1US	5072

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Louis A. Morris
Akzo Nobel Inc.
7 Livingstone Avenue
Dobbs Ferry, NY 10522-3408

EXAMINER

ILDEBRANDO, CHRISTINA A

ART UNIT	PAPER NUMBER
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1725

DATE MAILED: 01/02/2003

7

Please find below and/or attached an Office communication concerning this application or proceeding.

AS-7

Office Action Summary	Application No. 09/773,361	Applicant(s) NIEMAN ET AL.	
	Examiner Christina Ildebrando	Art Unit 1725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 January 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) 8 and 9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☒ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>5</u> . | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-7, drawn to a catalyst composition, classified in class 502, subclass 68.
 - II. Claims 8-9, drawn to a hydrocarbon conversion process, classified in class 208, subclass 109+.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the product as claimed can be used in a materially different process of use, such as a catalyst for the purification of nitrogen oxides.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Mr. Louis Morris on November 13, 2002, a provisional election was made with traverse to prosecute the invention of Group I, claims 1-7. Affirmation of this election must be made by applicant in replying to this

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Office action. Claims 8-9 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Oath/Declaration

6. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

The Declaration states that the Specification was filed on July 15, 1999 as PCT/EP99/05049. This is improper because the application has not been filed under 371. No 371 Transmittal papers were filed with the application. The PCT should be listed under 120, domestic priority, as a continuation of PCT/EP99/05049. To receive benefit of the earlier priority data, Applicant should file a copy of the priority documents, with a certified translation. To date, none of the priority documents have been received by the Office. Further, Applicant should amend the specification to reflect that the application is in fact a continuation of PCT/EP99/05049.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-2 and 4-7 are rejected under 35 U.S.C. 102(b) as being anticipated by DeBoer et al.

DeBoer et al. (WO 96/07477) discloses a catalyst composition comprising a synthetic clay component (page 1, lines 3-5). DeBoer et al. teaches that an exceptionally favorable hydroprocessing catalyst is obtained by incorporating a clay having elemental clay platelets having a diameter of 1 micron or less and an average degree of stacking of 20 platelets per stack or less (page 3, lines 8-20). The clay contains trivalent, divalent, tetravalent ions and the use of a magnesium saponite is preferred (page 16, lines 10-12). De Boer et al. teaches that the clay can be combined with other catalytic components (pages 10-12) and further teaches that an example of a catalyst composition useful for hydrocracking processes comprises 3-40wt% of hydrogenation metals, preferably Ni and Mo or W, 1-60 wt% of the clay component, 3-55wt% of zeolite, with the balance being alumina (considered to meet the support material claimed herein) (page 15, line 30 – page 16, line 5). Suitable zeolites include a Y zeolite having a unit cell size in the range of 2.400-2.480nm (page 16, lines 5-12).

It is noted that the instant claims recite a carrier composition comprising a synthetic cracking component, wherein the cracking component comprises elemental

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clay platelets and/or a cogel component, in combination with a Y zeolite. DeBoer et al. discloses a composition comprising the clay platelets in combination with the Y zeolite. Therefore, as each and every element of the claimed invention is taught in the prior art as recited above, the claims are anticipated by DeBoer et al.

9. Claims 1 and 3-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Nieman et al.

Nieman et al. (WO 00/00286) discloses a cogel comprising oxides of elements including magnesium, silicon, and aluminum, which is essentially X-ray amorphous, has a saponite content of less than 60%, and a total of sodium and potassium contained in the cogel in amounts less than 0.5wt% (page 5, lines 1-20 and Example 1). It is taught that the cogel can be combined with other catalytic components (pages 25-27) and further teaches that an example of a catalyst composition useful for hydrocracking processes comprises 3-40wt% of hydrogenation metals, preferably Ni and Mo or W, 1-60 wt% of the cogel component, 3-55wt% of zeolite, with the balance being alumina (considered to meet the support material claimed herein) (page 30, line 28 – page 31, line 5). Suitable zeolites include a Y zeolite having a unit cell size in the range of 2.400-2.480nm (page 31, lines 5-12).

It is noted that the instant claims recite a carrier composition comprising a synthetic cracking component, wherein the cracking component comprises elemental clay platelets and/or a cogel component, in combination with a Y zeolite. Nieman et al. discloses a composition comprising the cogel in combination with the Y zeolite.

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Therefore, as each and every element of the claimed invention is taught in the prior art as recited above, the claims are anticipated by Nieman et al.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over DeBoer et al. in view of Nieman et al., or alternatively, Nieman et al. in view of DeBoer et al.

The rejection of DeBoer et al. in view of Nieman et al. or alternatively, Nieman et al. in view of DeBoer et al. applies to those embodiments in which the claims require both the clay platelets and the cogel in combination with a Y zeolite.

DeBoer et al. (WO 96/07477) discloses a catalyst composition comprising a synthetic clay component (page 1, lines 3-5). DeBoer et al. teaches that an exceptionally favorable hydroprocessing catalyst is obtained by incorporating a clay having elemental clay platelets having a diameter of 1 micron or less and an average degree of stacking of 20 platelets per stack or less (page 3, lines 8-20). The clay contains trivalent, divalent, tetravalent ions and the use of a magnesium saponite is preferred (page 16, lines 10-12). De Boer et al. teaches that the clay can be combined with other catalytic components (pages 10-12) and further teaches that an example of a catalyst composition useful for hydrocracking processes comprises 3-40wt% of

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hydrogenation metals, preferably Ni and Mo or W, 1-60 wt% of the clay component, 3-55wt% of zeolite, with the balance being alumina (considered to meet the support material claimed herein) (page 15, line 30 – page 16, line 5). Suitable zeolites include a Y zeolite having a unit cell size in the range of 2.400-2.480nm (page 16, lines 5-12).

Nieman et al. (WO 00/00286) discloses a cogel comprising oxides of elements including magnesium, silicon, and aluminum, which is essentially X-ray amorphous, has a saponite content of less than 60%, and a total of sodium and potassium contained in the cogel in amounts less than 0.5wt% (page 5, lines 1-20 and Example 1). It is taught that the cogel can be combined with other catalytic components (pages 25-27) and further teaches that an example of a catalyst composition useful for hydrocracking processes comprises 3-40wt% of hydrogenation metals, preferably Ni and Mo or W, 1-60 wt% of the cogel component, 3-55wt% of zeolite, with the balance being alumina (considered to meet the support material claimed herein) (page 30, line 28 – page 31, line 5). Suitable zeolites include a Y zeolite having a unit cell size in the range of 2.400-2.480nm (page 31, lines 5-12).

DeBoer et al. does not teach that the composition further contains a cogel component having the features recited in claim 1.

Nieman et al. does not teach that the composition further contains a clay component having the features recited in claim 1.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified to composition taught by DeBoer et al. to include the cogel component taught by Nieman et al. DeBoer et al. suggests that additional

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materials such as additional matrix materials may be added to the composition and that such materials can be added to increase the catalytic activity of the composition. Refer to pages 11-12 of DeBoer et al. Nieman et al. teaches that increased catalytic activity can be achieved through the use of the cogel taught by the reference and further suggests combining the cogel with catalytic materials including clays and molecular sieves. Refer to pages 4-5 and 25-27 of Nieman et al. Therefore, one of ordinary skill would have been motivated to modify the composition taught by DeBoer et al. to include the use of the Nieman et al. cogel in light of the advantages over conventional matrix materials taught by DeBoer et al. Because both compositions can be used in the same process of use, one would have reasonable expectation of success from the combination. Also, combining two or more materials for the same purpose to form a third material that is to be used for the same purpose has been held to be a prima facie case of obviousness. *In re Kerkhoven*, 205 USPQ 1069.

Alternatively, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the composition taught by Nieman et al. to include the use of the specific clay taught by DeBoer et al. Nieman et al. suggests that the cogel may be combined with other known catalytic materials, such as clays. Refer to page 26 of Nieman et al. DeBoer et al. teaches that a higher catalytic activity is associated with the use of a clay having the specified platelet size and degree of stacking. Refer to page 3 of DeBoer et al. Therefore, one of ordinary skill would have been motivated to modify the composition taught by Nieman et al. to include the use of the DeBoer et al. clay in light of the advantages over conventional clays taught by

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Nieman et al. Because both compositions can be used in the same process of use, one would have reasonable expectation of success from the combination. Also, combining two or more materials for the same purpose to form a third material that is to be used for the same purpose has been held to be a prima facie case of obviousness. *In re Kerkhoven*, 205 USPQ 1069.

12. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over DeBoer et al. in view of Meyer.

This rejection applies to those embodiments which require a clay and a cogel in combination with a Y zeolite.

DeBoer et al. (WO 96/07477) discloses a catalyst composition comprising a synthetic clay component (page 1, lines 3-5). DeBoer et al. teaches that an exceptionally favorable hydroprocessing catalyst is obtained by incorporating a clay having elemental clay platelets having a diameter of 1 micron or less and an average degree of stacking of 20 platelets per stack or less (page 3, lines 8-20). The clay contains trivalent, divalent, tetravalent ions and the use of a magnesium saponite is preferred (page 16, lines 10-12). De Boer et al. teaches that the clay can be combined with other catalytic components (pages 10-12) and further teaches that an example of a catalyst composition useful for hydrocracking processes comprises 3-40wt% of hydrogenation metals, preferably Ni and Mo or W, 1-60 wt% of the clay component, 3-55wt% of zeolite, with the balance being alumina (considered to meet the support material claimed herein) (page 15, line 30 – page 16, line 5). Suitable zeolites include a Y zeolite having a unit cell size in the range of 2.400-2.480nm (page 16, lines 5-12).

DeBoer et al. does not teach that the composition further contains a cogel having the properties recited in claim 1.

Meyer (US 3,951,864) discloses a catalyst composition useful in hydrocarbon conversion processes such as hydrocracking comprising a silica-alumina-magnesia cogel as a matrix material (column 1, lines 55-60 and column 2, lines 15-45). Meyer suggests that that catalyst composition possesses a higher activity as compared to conventional compositions by virtue of presence of magnesia in the matrix material. Refer to columns 5-7. With regards to the properties of the cogel recited in claim 1, it appears that the cogel would not contain any residual sodium and the reference does not disclose the presence of a saponite phase. Refer to the method of making described at column 3, lines 30-55 and the Examples.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the composition taught by DeBoer et al. to include the use of the cogel taught by Meyer. DeBoer et al. teaches that the catalyst composition may further contain conventional matrix materials. Refer to page 11 of DeBoer et al. One of ordinary skill would have been motivated to substitute the cogel taught by Meyer in light of the teaching by Meyer that such a matrix material has an improved activity over the conventional materials taught by DeBoer et al. Because both compositions can be used in the same process of use, one would have reasonable expectation of success from the combination.

13. Claims 1 and 3-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meyer in view of DeBoer et al.

This rejection applies to those embodiments which require a clay or a cogel in combination with a Y zeolite.

Meyer (US 3,951,864) discloses a catalyst composition useful in hydrocarbon conversion processes, such as hydrocracking (column 1, lines 55-60). The catalyst composition comprises:

Component	Minimum Wt%	Maximum Wt%
Silica-Alumina-Magnesia cogel	20	90
Group IVB	0	20
Group VIB	3	35
Group VIII	3	20
Zeolite	2	50

Refer to column 2, lines 60-65. Suitable zeolites include zeolite Y (column 3, lines 20-25). The use of nickel in combination with tungsten is exemplified as suitable hydrogenation metals. With regards to the properties of the cogel recited in claim 1, it appears that the cogel would not contain any residual sodium and the reference does not disclose the presence of a saponite phase. Refer to the method of making described at column 3, lines 30-55 and the Examples.

Meyer differs from the instant claims in that Meyer does not teach the unit cell size of the zeolite Y.

DeBoer et al. (WO 96/07477) teaches a hydrocracking catalyst composition comprising a Y zeolite having a unit cell size of 2.400-2.480 nm (page 16, lines 5-11).

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It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the composition taught by Meyer to include the use of a Y zeolite having the instantly claimed unit cell size in light of the teaching by DeBoer et al. that such forms of Y zeolite are useful in hydrocracking processes. Because both compositions can be used in the same process, one would have reasonable expectation of success from the combination.

Conclusion


14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christina Ildebrando whose telephone number is (703) 305-0469. The examiner can normally be reached on Monday-Friday, 7:30-5, with Alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (703) 308-3318. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0651.

CAI
December 20, 2002


TOM DUNN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700